

(19) World Intellectual Property
Organization
International Bureau



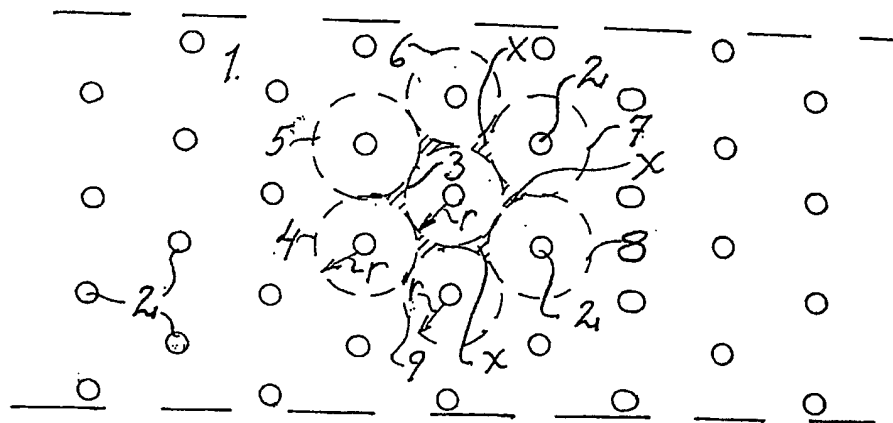
(43) International Publication Date
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number
WO 2005/057123 A1

- (51) International Patent Classification⁷: **F42B 1/00**
- (21) International Application Number:
PCT/SE2004/001820
- (22) International Filing Date: 8 December 2004 (08.12.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0303300-8 9 December 2003 (09.12.2003) SE
- (71) Applicant (for all designated States except US): **EU-RENCO BOFORS AB** [SE/SE]; S-691 86 Karlskoga (SE).
- (72) Inventor; and
(75) Inventor/Applicant (for US only): **DAHLBERG, Johan** [SE/SE]; Kungsgatan 2, S-702 11 Örebro (SE).
- (74) Agent: **LUNDAHL, Kjell**; Saab Bofors Support AB, Patents and Trademarks, S-691 80 Karlskoga (SE).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **PROGRESSIVE PROPELLANT CHARGE WITH HIGH CHARGE DENSITY**



(57) Abstract: The present invention relates to a method for producing propellant charges with progressive combustion characteristic and a higher charge density than previously considered possible to achieve, intended in the first instance for direct-firing barrel weapons such as tank cannons. Combined in the charge that is characteristic of the invention are at least two radially perforated propellant tubes (10-12, 28-30, 48-52) which are arranged in their entirety inside or after one another, which process, at an e-dimension selected in relation to the actual type of propellant and its desired combustion characteristic, combustion or ignition channels (2, 19-21, 37), and which have circular outer and inner boundary surfaces, in conjunction with which, before initiation of the charge, at least one of the total number of outer surfaces of these propellant tubes that are available for initiation has been treated with an inhibition, surface treatment or surface coating (13-18, 33-36) intended to delay the propagation of ignition to that surface, so that the combustion of the propellant tubes is partially mutually overlapping and taken together, gives rise to a maximum propellant gas pressure behind a projectile fired with the charge from the barrel in question, which pressure, for the entire passage of the projectile through the barrel, lies close to the applicable P_{max} value for the barrel (the maximum operational pressure, i.e. the highest barrel pressure that can be permitted continuously).